

# Delays in getting to specialist care for people with diabetes and foot problems. What are the delays and how can we reduce them? A Position Statement from the ZAP Amputation group of FDUK

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**A crucial barrier to effective diabetic foot care is the delay in accessing specialist care. Delays can take place in three situations: 1. Delay by the person with diabetes in seeking care. A lack of knowledge in the person with diabetes can lead to a lack of urgency in seeking help from a healthcare professional. 2. Delay by healthcare professionals in referring to specialist care. When a person with a foot problem seeks advice, there is sometimes a delay due to failure of a healthcare professional to make a diagnosis 3. Delay in accessing care related to the multidisciplinary diabetic foot team. Referrals from primary and community care to the multidisciplinary foot team are difficult if it meets infrequently or does not exist and that is the situation in some Hospital Trusts in the UK. Four recommendations to reduce delays are put forward: 1. Formation of a credible multidisciplinary diabetic foot team. 2. Organisation of efficient referral pathways. 3. Establishment an advanced/consultant podiatrist role. 4. Utilisation of the ACT NOW acronym as a triage tool to highlight warning signs leading to amputation.**

A person with diabetes (PwD) has a one-in-three chance of developing a foot ulcer in their lifetime (Armstrong et al, 2017; Edmonds et al, 2020). Diabetes-related foot ulcers are highly susceptible to infection, which can rapidly spread through the foot and lower limb causing infective gangrene and as a result, major tissue destruction (Mishra et al, 2017). The concept of 'Time is Tissue' emphasises the critical importance of opportune intervention because the rate at which infection spreads correlates with the extent of the tissue damage (Vas et al, 2018). In addition to infection, peripheral arterial disease (PAD) associated with diabetes can result in ischaemic ulcers and gangrene with a risk of

amputation and death (Phillips and Mehl, 2015). Major lower-limb amputations have a profound negative impact on the quality of life (QoL), affecting mobility, independence and the ability to perform daily activities (Wukich et al, 2018).

Although it may be challenging to completely prevent foot ulceration, it is certainly possible to try to prevent the complications of ulceration, such as sepsis, osteomyelitis or gangrene. Rapid diagnosis and timely intervention are crucial in managing ulceration, infection and ischaemia effectively. The provision of speedy access to specialist assessment and treatment from a multidisciplinary foot team (MDFT) can significantly improve clinical outcomes and increase quality-adjusted life years

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## Key words

- Amputation
- Delays
- Diabetes-related ulcers
- Specialist care

## Article points

1. Initial assessment of foot problems in diabetes is carried out in community or primary care. It is, therefore, vital that referral routes for the PwD are robust and well-known to ensure rapid access to the MDFT
2. Delays in accessing specialist MDFT can have catastrophic outcomes for the PwD in terms of tissue loss, amputation and/or early mortality
3. Advanced/consultant podiatrist roles should be developed within each hospital Trust to co-ordinate foot care services for a PwD
4. ACT NOW is a simple, six-stage triage tool to empower the PwD and HCPs to determine if a foot problem requires

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(QALYs) (Ortegon et al, 2004; Canavan et al, 2008; Krishnan et al, 2008).

Variations in access to specialist care have been found to contribute significantly to the discrepancies in lower-limb extremity amputation rates, both globally and in the UK (Moxey et al, 2011; Holman et al, 2012; Carinci et al, 2016). A crucial barrier to effective diabetic foot care lies in the delay in accessing specialist care. Until this challenge is addressed, quality of care will remain suboptimal, and amputations will continue (Pankhurst and Edmonds 2018). Addressing these delays is vital for optimising patient outcomes. In addition, there may be cost savings, as one estimate states that by reducing the late referrals to specialist foot teams by 50%, the resultant reduced number of amputations could save £34 million a year (National Audit Office, 2012). Also, from a medico-legal perspective, delays in referral to specialist care may result in amputations that might be attributed to medical negligence (Mottolini 2022).

Thus, addressing this challenge of delay is important to improve outcomes and minimise the burden of amputations. Reducing delays depends on streamlined pathways, and timely responses and actions from both people requiring treatment and healthcare professionals (HCPs). Specific patient-related issues such as mental health and health literacy, have previously been discussed as factors contributing to delays in presenting to the diabetic foot clinic and in some cases, of actual non-attendance or 'missingness' from the diabetes foot clinic (Robbie et al, 2023). Modern diabetic foot care deems that those persons who develop active diabetic foot disease should have rapid access to a multidisciplinary diabetic foot service (NHS England (2016) New Framework to Improve Care for Patients with Diabetic Foot Disease). This paper focuses primarily on addressing delays in accessing such a service and their causes. Reduction of delays not only requires efficient pathways, but also the prompt actions of both the PwD and HCPs. Addressing these challenges is essential to improving outcomes in diabetic foot care and reducing the burden of amputations.

## Delays in presenting to specialist care and the MDFT

The National Diabetes Footcare Audit (N DFA),

which measures patient management and outcomes for people with DFU and care structures and assesses performance against National Institute for Health and Care Excellence (NICE) guidelines, has demonstrated significant national variations in the times between first contact with an HCP and the subsequent appearance at specialist care. The N DFA Fourth Annual Report stated that the proportion of cases seen by specialist care in less than two weeks ranged from 12% to 97% between providers in England and Wales and from 45% to 80% between NHS Clinical Networks (NHS Digital (2019) National Diabetes Foot Care Audit Fourth Annual Report). The audit identified that the time to specialist review was greater than 2 weeks for 40% of referrals, despite the NICE NG19 recommendation of referral to the MDFT or Foot Protection Service (FPS) within 1 working day and triage within 1 further working day (NICE, 2019). When time to assessment is greater than 14 days, there are less favourable outcomes at 12 weeks, and ulcers seen with time to expert assessment greater than 2 months are most likely to be severe. This supports the N DFA assertion that the longer it takes for a person with diabetes and a new foot ulcer to receive expert care, the greater the chance of the ulcer being severe and not healed after 6 months. Furthermore, it is more likely for the person to have a hospital admission within 6 months necessitating interventions such as amputation.

In the NHS Resolution report of 92 closed clinical negligence claims, which were reviewed via thematic analysis, it was noted that once a diabetic foot problem was identified, PwD experienced delays in being seen by a specialist footcare team (Mottolini, 2022). Often, the severity of the problem was not recognised and there was an absence of urgency in providing care. The HCP who first saw the PwD was a general practitioner in 29%, an Accident & Emergency clinician in 22%, unknown inpatient clinician in 12%, practice nurses in 11%, community podiatrist in 9%, and other in 17% (Mottolini, 2022).

The most recent report of the N DFA, published as an Interval Review in 2022, found that the proportion of referrals seen by a specialist foot care service within 13 days had slightly increased from 43% in 2014–15 to 46% in 2020–21 (NHS Digital (2022) N DFA Interval Review: July 2014–March 2022). The report related the focus of the N DFA

on the prompt referral to the specialist team with a reduction in the proportion of ulcers that were severe at first expert assessment from 48% in 2014–15 to 43% in 2020–21 and the subsequent decrease in the proportion of ulcers still active (not healed) at 12 weeks from 49% in 2014–15 to 40% in 2020–21.

### **Deficiencies in care structures associated with delays**

Problems with care structure predispose to delays. Regarding the assessment of urgent referrals within 24 hours, the NDEFA Fourth Annual Report stated that almost half of providers (46%) did not have a referral pathway in place (NHS Digital (2019) National Diabetes Foot Care Audit Fourth Annual Report). In 2022, NDEFA National Report: Interval Review, 96 out of a total of 223 NHS trusts and LHBs in England and Wales, responded to a questionnaire on aspects of care delivery which were chosen by clinical members of the NDEFA Advisory Group. In those that did reply, 91%, had a dedicated MDFT, 98% had a designated pathway by which a person with any form of diabetic foot disease could get rapid access to specialist (MDFT) assessment, 98% stated that they had designed a pathway to ensure that all people with diabetes newly presenting with active foot disease could be assessed with appropriate urgency (14 days maximum). However, the Diabetes Getting It Right First Time (GIRFT) report in 2020 noted that in many areas, hospitals still did not have a fully established MDFT to coordinate care of both inpatients and outpatients with footcare problems (Rayman and Kar 2020; Diabetes GIRFT Programme National Specialty Report).

### **Delays in treating people with diabetes and peripheral arterial disease**

A systematic review of the delays in the management of chronic limb-threatening ischaemia and foot ulceration in people with diabetes, reported that: ‘median times from symptom onset to specialist healthcare assessment ranged from 15 to 126 days, with subsequent median times from assessment to treatment ranging from 1 to 91 days’ (Nickinson et al, 2020). Time delays, which in some cases

were prolonged, existed in all aspects of the management pathway. These delays occurred because of poor patient health-seeking behaviours, inaccurate health care assessment, and barriers to referral and treatment within the care pathway (Nickinson et al, 2020). For patients with diabetes and PAD, a delay of greater than 14 days from primary care assessment to revascularisation has been identified as an independent predictor of major amputation (OR: 3.1; 95% CI: 1.4–6.9), which did not occur in patients without diabetes (Noronen et al, 2017).

### **Delays in referral to specialist teams in Europe**

Despite differences in healthcare structures across Europe, delays in referral to specialist foot care teams are frequent (Manu et al, 2018). Referral patterns for DFU, from primary care to specialist diabetes foot care units were studied via a quantitative, online questionnaire given to GPs across four countries in Europe. GP perceptions of referrals for DFU in France, the UK, Germany, and Spain were assessed.

Although patients presented with foot symptoms and signs on average 60% of the time, the diagnosis was an incidental finding during a consultation in 13–28% of the time. In 55–66% of cases, the duration of DFU was unknown or DFU diagnosis was delayed more than 3 weeks from the onset of the wound. Only 40% of GPs indicated that they could identify clinical practitioners working on DFU in a hospital facility (Manu et al, 2018). In Norway, the PwD who was referred to specialist health care by a general practitioner longer than 52 days after ulcer onset had a 58% (SHR 0.42; 95% CI: 0.18–0.98) decreased healing rate compared with the PwD who was referred earlier (Smith-Strøm et al, 2017). Furthermore, on average, 48% of individuals with diabetes were referred after an unknown duration or more than one month from the onset of DFU.

### **Reasons for delays in reaching specialist care**

Delays can take place in three situations: delay by the person with diabetes in seeking care, delay by HCPs in referring to specialist care and delay in accessing care related to the MDFT.

### **Delay by the person with diabetes in seeking care**

A lack of knowledge can lead to a lack of urgency, particularly if neuropathy is present and the person may not feel that there is a problem. This leads to the PwD having poor health-seeking behaviours due to lack of understanding (Nickinson et al, 2020). Additionally, there may be reduced or little access to carers or family members who can assist in checking their feet and monitor foot health.

In a study investigating the reasons for pre-hospital patient delay in 270 diabetes-related foot problems in China, the median pre-hospital delay time was 46.49 days. (Yan et al, 2014). The individuals with diabetes reported short ( $\leq 1$  week; 77 patients: 28.5%), moderate ( $>1$  week and  $\leq 1$  month; 106 patients: 39.3%) and long delays ( $> 1$  month; 87 patients: 32.2%). There were nine variables linked with a longer delay ( $P < 0.05$ ):

- (1) no previous ulcer;
- (2) no health insurance;
- (3) poor housing conditions;
- (4) low-income level;
- (5) low educational level;
- (6) infrequent foot inspection;
- (7) few follow-up medical visits;
- (8) absence of diabetic foot education;
- (9) lack of knowledge of foot lesion warning signals.

Furthermore, a multivariate analysis demonstrated that the absence of diabetic foot education (Odds ratio: 2.70; 95% CI: 1.03–7.06,  $P = 0.043$ ) and lack of knowledge of foot lesion warning signals (Odds ratio: 2.14, 95% CI: 1.16–3.94;  $P = 0.015$ ) were independent predictors of long delays that increased the risk of amputation (Odds ratio: 2.22; 95% CI 1.36–3.64,  $P = 0.002$ ) and mortality (Odds ratio: 2.69; 95% CI: 1.35–5.33,  $P = 0.005$ ). This emphasises the importance of patient factors, including psychological factors, in causing delays, which were addressed in our previous paper from the ZAP Amputation group (Robbie et al, 2023).

### **Delay by HCPs in referring to specialist care**

When a PwD seeks advice from an HCP, there is sometimes a delay due to the HCP's failure to either identify a problem or make a diagnosis. Even

after making the correct diagnosis, there may still be a lack of appreciation as to the seriousness and urgency of the condition, resulting in delays in making an appropriate referral to specialist care. HCPs may fail to recognise infection or ischaemia in the absence of pain because of concomitant neuropathy (Mills et al, 1991). Delays occur because there is a failure of recognition by HCPs of important events such as a break in the skin or redness and signs of infection that may lead to mistaken healthcare assessments (Nickinson et al, 2020). An association has been noted between the number of HCPs in the referral pathway and increased delays in reaching specialist hospital care: the more complex the referral pathway, the greater the delay (Sanders et al, 2013).

When 425 HCPs were asked to write down concerns which they, as HCPs, considered to act as barriers to foot care for people with diabetes, they noted poor recognition and diagnosis of foot problems, lack of awareness of the need for referral both by the PwD and HCPs, difficulties in the referral pathway, difficulties in accessing specialist diabetes foot services, lack of access to multidisciplinary care, as well as shortage of resources and lack of education of both the PwD and HCPs. The respondents identified these barriers as contributions to delays in people with diabetes receiving specialist care and also cited funding constraints, centralisation of vascular services and lack of staffing (Pankhurst and Edmonds, 2018). Another important reason for delays is the current workforce challenges and shortage of HCPs working in primary care who are available to assess the foot.

### **Delays in assessing and treating referrals in specialist care**

Referrals from HCPs in primary and community care cannot be made to the MDFT if an MDFT does not exist and that is the situation in some Hospital Trusts. McIntosh (2017) estimated that there was a national shortage of 7,000 podiatrists, which was acting as a barrier to accessing effective MDFT provision. Getting It Right First Time (GIRFT) reported in 2020 that in many areas, hospitals still do not have a fully established MDFT. Even when the MDFT exists, it is thought that MDFTs meet on average once a week, and this in itself leads to delays in seeing patients referred from

primary and community care. Furthermore, there is also a shortage of orthotists, with there being a very high rate of attrition to the professions of orthotics and prosthetics. (HCPC Insight & Analytics Team, 2023)

It is difficult to know accurately how many hospital sites in England and Wales have an MDFT. The National Diabetes Inpatient Audit (NaDIA) describes the structures of care that are fundamental to achieving the standards of safe effective inpatient diabetes care. The report of 2018 stated that one sixth of hospital sites (17.3%) did not have an MDFT (NHS Digital (2018) National Diabetes Inpatient Audit (NaDIA)). However, two fifths of NaDIA sites have subsequently received Diabetes Transformation Funding to improve access to an MDFT following recognition of the importance of early referral by the NHS England Diabetes Programme.

In the NHS Resolution report (2022), Mottolini, stressed that the absence of a recognised responsible MDFT led to a lack of comprehensive investigations, no clear diagnosis or communication between clinicians and, consequently, the severity of the situation was missed or downplayed. The subsequent care was not delivered with the urgency that patients at risk of limb loss require. Indeed, delay in receiving vascular assessment can be associated with poor outcomes and a recent study of patients presenting with chronic limb-threatening ischaemia (CLTI) has demonstrated that those who initially present to non-arterial hospital sites face longer delays to revascularisation and that the delay was associated with worse outcomes, both for amputation and death (Li et al, 2022). A Finnish study reported that a delay of more than two weeks from the primary care assessment to revascularisation was an independent predictor of major amputation in patients with diabetes and CLTI presenting with tissue loss (Odds ratio: 3.1; 95% CI: 1.4 to 6.9), compared with a delay of less than 2 weeks (Noronen et al, 2017).

### Ways forward to reduce delay in reaching specialist care

The way forward is to have coordinated action between the main players involved in diabetes foot care namely the MDFT, HCPs and people with diabetes. The success of this action is

dependent on efficient referral pathways into the MDFT which are facilitated by HCPs on behalf of the PwD. Such coordination is contingent on the close interaction between the main players. However, four separate recommendations to reduce delay will be highlighted but there will inevitably be some overlap between these recommendations.

1. Formation of a credible MDFT Team
2. Organisation of efficient referral pathways
3. Establishment an advanced/consultant podiatrist role
4. Use of the ACT NOW acronym by the PwD and HCPs.

Also the success of this action plan is dependent on a sufficient workforce and the numbers of HCPs in training be should be monitored and maintained.

## Recommendations

### Formation of a credible MDFT Team

The MDFT should be the cornerstone of diabetic foot care in each Hospital Trust, and it should be focused in the diabetic foot clinic, providing outpatient and inpatient care. The MDFT should rapidly investigate and treat foot disease, focusing on foot ulcers, infection, ischaemia and Charcot neuroarthropathy (NHS England (2016) New framework to Improve Care for Patients with Diabetic Foot Disease). All Hospital Trusts should have a dedicated MDFT as indicated in the NHS Long Term Plan (NHS England (2019, NHS Long Term Plan), NICE NG19, the NDEA Fourth Annual Report and GIRFT (Getting It Right First Time)).

The MDFT should be available to receive referrals from all HCPs who act as the first clinicians to assess a person with diabetes foot problems. The MDFT should be integrated with the community foot care protection service namely the Foot Protection Service (FPS) and with hospital renal wards and dialysis units (Rayman and Kar, 2020; Diabetes GIRFT Programme National Specialty Report). The MDFT should provide access to podiatrist, diabetologist, orthotist, nurse, surgeon (vascular, orthopaedic, podiatric, plastic,) interventional radiologist, microbiologist and clinical psychologist if possible, while accepting that all disciplines may not be and need not be physically in attendance



at the same time in the clinic. However, the MDFT clinic should facilitate the assessment and management of the PwD by several disciplines to enable authoritative and important therapeutic decisions to be made.

A major project between Clinical Commissioning Groups in the South West of England stressed 10 steps to effective diabetic foot care services. With respect to the MDFT, this included an MDFT weekly in which all involved clinicians attend as part of their specific job plans, an orthotist as an integral part of MDFT and an urgent vascular opinion to be available to foot clinic staff (Paisey et al, 2018) Furthermore, the Provision of Services for People with Vascular Disease 2021 document indicated that a vascular specialist should be present at MDFT clinics. However, GIRFT noted that in many areas, Hospital Trusts still do not have a fully established MDFT to coordinate care of both inpatients and outpatients with footcare problems. GIRFT warned that this is a 'systemwide issue', which will require commissioners in primary care and providers in both primary and secondary care to work together to establish a credible MDFT in each Hospital Trust. The English Diabetes Footcare Network (EDFN) explored the structure of MDFTs by means of questionnaires to English Clinical Networks and subsequently highlighted the need for a standardised, mandated and fully commissioned MDFT which undertakes root cause analysis of major amputations and is subject to peer review (Leigh et al, 2020).

Even when MDFTs do exist, on average, they meet only once a week and it is difficult to fulfil the NICE recommendations that the PwD with an ulcer(s) should be referred within one working day of the initial examination to the MDFT or FPS and should be triaged within a further working day. However, NICE NG19 (2019) did state that referral may be made to the FPS and it has been suggested that this team may initially undertake the treatment of uncomplicated ulcers. The International Diabetic Foot Care Group and D-Foot International have developed an easy-to-use tool to support primary healthcare professionals in the prompt treatment of patients with DFUs. They divided ulcers into uncomplicated DFUs, which are defined as superficial, non-infected and non-ischæmic ulcers, complicated DFUs defined as ischæmic and/ or infected and/ or deep (bone, muscle or tendon

exposure) ulcers and severely complicated DFUs if gangrene or an abscess is present or if the patient has fever or sepsis (Meloni et al, 2019). It was suggested that uncomplicated DFUs could be monitored and treated by primary HCPs and only referred to diabetic foot clinics in the absence of signs of healing as indicated by <30% reduction in ulcer area or the absence of granulation tissue or signs of re-epithelialisation after two weeks of standard care. Patients with complicated DFUs should be referred to diabetic foot clinics within four days of their initial assessment and severely complicated DFUs should receive urgent treatment in diabetic foot clinics within 24 hours of diagnosis (Meloni et al, 2019).

#### **Organisation of efficient referral pathways**

The NDA Sixth Annual Report: Interval Review (2022) stressed that all new foot ulcer episodes should have early expert assessment. It also recommended that specialist clinical services that care for patients with diabetes and foot ulcers should be easily accessible (NHS Digital (2022) NDA Interval Review: July 2014–March, 2021). The NDA has shown that the more rapid referral to the specialist foot care service leads to fewer severe ulcers and better 12-week outcomes. The 2018 NDA 'Success Factors' Survey asked 10 NHS services, with the highest proportion of patients with severe foot ulcers that were alive and ulcer free at 12 weeks, to pinpoint factors that were responsible for their relative success (NHS Digital (2019) National Diabetes Foot Care Audit Fourth Annual Report). All 10 services reported direct access to a MDFT and good community podiatry and MDFT integration. At least 80% of services reported fuss-free referrals accepted from any HCP or PwD, an option for next working day appointments and prompt access to a vascular service. Thus referral processes and pathways should be clearly documented and promoted, and there should be streamlined pathways across primary care, community, acute and inpatient teams. These referral pathways should facilitate the NICE NG19 (NICE, 2019) recommendations to refer within 1 working day of the initial examination to the MDFT or FPS and these have also been recently highlighted by the National Wound Care Strategy (NWCS) Programme (NICE, 2019, National Wound Care Strategy (2023) Foot Ulcer Recommendations).

In a series assessing the Fast Track Pathway (FTP) of the International Diabetic Foot Care Group and D-Foot, PwDs were divided into early referral (ER) and late referral (LR) persons with diabetes. According to the FTP, ER persons were considered to be persons who were referred immediately after two weeks in the case of uncomplicated non-healing ulcers (superficial, not infected, not ischaemic), within four days in the case of complicated ulcers (ischaemic, deep, mild infection) and within 24 hours in the case of severely complicated ulcers (abscess, wet gangrene, fever). LR persons were referred outside these time limits. ER persons showed increased rates of healing (89.9 versus 41.5%,  $P=0.001$ ), reduced healing time (10 versus 16 weeks;  $P=0.0002$ ), lower rates of minor (17.6 vs. 75.6%,  $P<0.0001$ ) and major amputation (0.6 vs. 36.6%,  $P<0.0001$ ), hospitalisation (47.1 versus 82.9%;  $P=0.001$ ), and mortality (4.4 versus 19.5%;  $P=0.02$ ) in comparison to LR persons (Meloni et al, 2021).

#### Self-referral

Ideally to promote early diagnosis and treatment, the referral pathway should permit self-referral. The NDFA has constantly found that individuals who self-refer have a lower incidence of severe ulceration and ulcers which are more likely to be healed at 12 weeks (NHS Digital (2019) National Diabetes Foot Care Audit Fourth Annual Report). People that self-refer have usually had a previous foot ulcer and know the foot care team or they may have been identified as high-risk and attend a FPS. Most people cannot refer themselves directly to a specialist foot care service and must be referred. Delays in accessing GP appointments for assessment and referral, reinforce the requirement for PwDs to be able to self-refer and health commissioners and providers should support the option of self-referral by the PwD directly to their local MDFT.

#### Referral for ischaemic patients

HCPs in primary care should refer the PwD with suspected ischaemic ulceration to the MDFT or direct to the vascular service. The NWCSP has produced a Peripheral Arterial Disease/Chronic Limb-Threatening Ischaemia Assessment and Referral Form (National Wound Care Strategy (2023) Foot Ulcer Recommendations) that is intended to include all arterial referrals with

PAD. A vascular specialist should be present at multidisciplinary foot care clinics across the vascular network (Vascular Society of Great Britain and Ireland. Provision of Services for Patients with Vascular Disease 2021). A systematic review investigated potential time delays in the identification, referral, and management of both chronic limb-threatening ischaemia and DFUs (Nickinson et al, 2020). The review recommended standardised limits for referral and treatment times. A Best Practice Clinical Care Pathway for Peripheral Arterial Disease has been formulated by the Vascular Society of Great Britain and Ireland as a Peripheral Arterial Disease Quality Improvement Framework (PADQIF) programme (Boyle et al, 2022). A recent innovation has been the development of vascular podiatry as a new specialty, set in community clinics, which provides early diagnosis and treatment for life and limb-threatening vascular disease, promoting podiatry-vascular partnerships and the establishment of the Wound, Ischaemia, Foot Infection (WIFI) wound classification system as an integral part of the assessment of the ischaemic foot (Mills et al, 2014; Fox et al, 2022).

#### Establishment of an advanced podiatrist/consultant podiatrist role

When the EDFN investigated service provision in MDFTs by means of a questionnaire to English Clinical Networks, it concluded that the podiatrists were pivotal as gatekeepers and coordinators in assessing, diagnosing and treating patients (Leigh et al, 2020). The ZAP Amputation group recommend that a podiatrist at senior level either as advanced podiatrist /consultant podiatrist be appointed in each Hospital Trust as Clinical Lead of the MDFT to provide a link between clinical teams and also between clinicians and commissioners. In such a role, this podiatrist can provide diabetic foot expertise, not only on the day that the MDFT meets, but also to act on behalf of the MDFT on the days of the week when the MDFT is not physically present so as to meet the timely needs of the PwD at the point that care is required. Thus, initial assessment and triage may be carried out by the podiatrist who can decide if further members of the team need to be called urgently or alternatively the PwD can be seen in the next appropriate MDFT Clinic. Such a podiatrist could fulfil the role suggested by NHS

Figure 1. ACT NOW infographic.

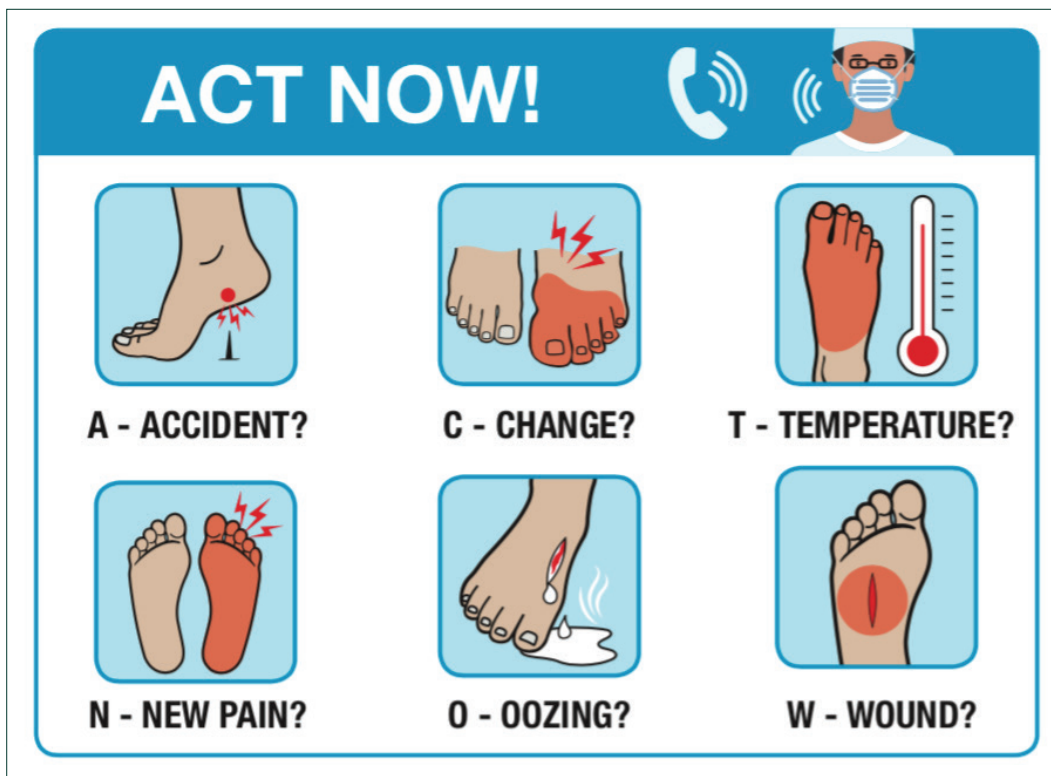


Figure 2. ACT NOW checklist.

**ACT NOW!**

Tool for all NHS Primary and Secondary Care services to promote prompt and rapid referral to the MDFT (Multidisciplinary Foot Care Team) (Edmonds et al, 2020). Refer the PwD (Person/People With Diabetes) if they present with any of the following to their foot/feet:

**iDEAL**  
Insights for Diabetes Excellence, Access and Learning  
www.idealdiabetes.com @IDEALdiabetes

ASSESSMENT OF FOOT		Tick if present	Digital photo taken to include with referral	Date referred	Document referral to Specialist MDFT
	<b>A - ACCIDENT?</b> Recent or history of an accident or trauma?				
	<b>C - CHANGE?</b> Is there any new swelling, redness or change of shape of the foot?				
	<b>T - TEMPERATURE?</b> If there is a change in temperature present? Could this be an infection or possible Charcot?				
	<b>N - NEW PAIN?</b> Is there pain present? Is it localised or generalised throughout the foot?				
	<b>O - OOZING?</b> What colour is any exudate? Is there an odour?				
	<b>W - WOUND?</b> Can you document the size, type and position of the wound in the foot affected?				

**Use of the ACT NOW acronym by the PwD and HCPs**

The issue of delay has been addressed by the iDEAL group (Insights for Diabetes Excellence, Access and Learning; a multidisciplinary team of diabetes specialists together with a PwD) who developed a simple innovative tool based on the acronym, ACT NOW which has been illustrated on a credit card like presentation (Figure 1). The ACT NOW acronym stands for:

- A – Accident – Recent or history of an accident, injury or trauma
- C – Change – Any new swelling, redness or change of shape of the foot
- T – Temperature – Either hot or cold. Could this be an infection or possible Charcot?
- N – New pain throughout the foot
- O – Oozing from break in the skin observing its colour or odour
- W – Wound recently developing on the foot.

Resolution to act as a local ‘Pathway Lead’ to link across clinical teams and also between clinicians and commissioners (Mottolini, 2022).

The ZAP Amputation group recommend that the ACT NOW acronym be incorporated into the education and activities of a PwD and HCPs. ACT NOW aims to help the PwD and HCPs



recognise the warning signs that may lead to amputation and should trigger referral to specialist care (Edmonds et al, 2020). This resource is similar to the acronyms STOP and FAST, which were successfully associated with the campaigns to help the public recognise the early warning signs of heart attack and stroke. By recognising one or more of these features, the PwD should be encouraged and empowered to ACT NOW and seek specialist help, either from a first contact HCP who can then make referral to specialist care or directly from a MDFT for rapid diagnosis and treatment (Edmonds et al, 2020).

### Way Forward for the PwD

If the warning signs of ACT NOW are identified, the PwD should be able to seek advice and help initially from the HCP in primary care or even be permitted to self-refer into their local MDFT. The short-term aim should be to ensure that PwD with a DFU can seek specialist help as quickly as possible for treatment.

### Way forward for HCPs

Often the initial assessment of the diabetic foot is carried out by HCPs in primary or community care and from there, referral made to the MDFT (Edmonds et al, 2020). There is, therefore, an ongoing need to educate HCPs in primary care and for a PwD to be aware of the need for prompt referral to MDFT. The ACT NOW checklist (Figure 2) was designed to aid HCPs in determining when to refer for specialist treatment and what is required for each individual assessment.

### Conclusion

To improve access to specialist care, it is important to:

- Form a credible, standardised, mandated, Job planned MDFT which should be fully commissioned in each Hospital Trust
- Organise acute referral routes for the PwD to have rapid access to MDFT
- Establish Advanced /Consultant Podiatrist posts to coordinate diabetic foot care in each Hospital Trust
- Use the ACT NOW Acronym and the ACT NOW checklist and incorporate them into the education and professional practice of the PwD and HCPs. ■

- Armstrong DG, Boulton AJM, Bus SA (2017) Diabetic foot ulcers and their recurrence. *N Engl J Med* 376(24): 2367–2375. <https://doi.org/10.1056/NEJMra1615439>
- Boyle J R, Atkins E R, Birmipili P, et al (2022) Best practice care pathway for peripheral arterial disease. *J Vasc Soc G B Irel* 1(Supp3): S1–13. <http://doi.org/10.54522/jvsgbi.2022.01>
- Canavan RJ, Unwin NC, Kelly WF, Connolly VM (2008) Diabetes- and nondiabetes-related lower extremity amputation incidence before and after the introduction of better organized diabetes foot care: continuous longitudinal monitoring using a standard method. *Diabetes Care* 31(3): 459–63. <http://doi.org/10.2337/dc07-1159>
- Carinci F, Massi Benedetti M, Klazinga NS et al (2016) Lower extremity amputation rates in people with diabetes as an indicator of health systems performance. A critical appraisal of the data collection 2000–2011 by the Organization for Economic Cooperation and Development (OECD). *Acta Diabetol* 53(5): 825–32. <https://doi.org/10.1007/s00592-016-0879-4>.
- Edmonds M, Phillips A, Holmes P et al (2020) To halve the number of major amputations in people living with diabetes, “ACTNOW”. *Diabetes & Primary Care* 22(6): 1–5. Available at: <https://tinyurl.com/4afb7myu> (accessed 16.01.23)
- Fox M, Gohil K, Sharman D et al (2022) Enabling podiatry-vascular partnerships for tackling chronic limb-threatening ischaemia. How is your Wfll? *The Diabetic Foot Journal* 25(3): 8–11. Available at: <https://tinyurl.com/523vhp9r> (accessed 16.01.23)
- Holman N, Young RJ, Jeffcoate WJ (2012) Variation in the recorded incidence of amputation of the lower limb in England. *Diabetologia* 55(7): 1919–25. <https://doi.org/10.1007/s00125-012-2468-6>
- HCPC Insight & Analytics Team (2023) *Retention Rates of First Time HCPC Registrants, 2013 to 2018*. Available at: <https://www.hcpc-uk.org/resources/reports/2023/retention-rates-of-first-time-hcpc-registrants-2013-to-2018/> (accessed 15.01.2024)
- Krishnan S, Nash F, Baker N et al (2008) Reduction in diabetic amputations over 11 years in a defined U.K. population: benefits of multidisciplinary team work and continuous prospective audit. *Diabetes Care* 31(1): 99–101. <https://doi.org/10.2337/dc07-1178>
- Leigh R, Edmonds M, McInnes A et al (2020). Outcomes of a questionnaire to English Clinical Networks: standardising multidisciplinary footcare teams and service evaluations. *The Diabetic Foot Journal* 23(2): 21–9. Available at: <https://tinyurl.com/hdbvu4nw> (accessed 16.01.23)
- Li Q, Birmipili P, Johal AS et al (2022) Delays to revascularization for patients with chronic limb-threatening ischaemia. *Br J Surg* 109(8): 717–26. <https://doi.org/10.1093/bjs/znac109>
- Manu C, Lacopi E, Bouillet B et al (2018) Delayed referral of patients with diabetic foot ulcers across Europe: patterns between primary care and specialised units. *J Wound Care* 27(3): 186–92. <https://doi.org/10.12968/jowc.2018.27.3.186>
- McIntosh K (2017) *The High Cost of Poor Footcare for Diabetic Patients*. London: MA Healthcare. Available at: <http://bit.ly/2sPC0pd> (accessed 15.01.2024)
- Meloni M, Izzo V, Manu C et al (2019) Fast-track pathway: an easy-to-use tool to reduce delayed referral and amputations in diabetic patients with foot ulceration. *The Diabetic Foot Journal* 22(2): 38–47. Available at: <https://tinyurl.com/sedyphk5> (accessed 16.01.23)
- Meloni M, Lazaro-Martínez JL, Ahluwalia R et al (2021) Effectiveness of fast-track pathway for diabetic foot ulcerations. *Acta Diabetol* 58(10): 1351–8. <https://doi.org/10.1007/s00592-021-01721-x>
- Mills Sr JL, Beckett WC, Taylor SM (1991) The diabetic foot: consequences of delayed treatment and referral. *South Med J* 84(8): 970–4
- Mills Sr JL, Conte MS, Armstrong DG et al (2014) The Society for vascular surgery lower extremity threatened limb classification system: risk stratification based on wound, ischaemia and foot infection. *J Vasc Surg* 59(1): 220–34. <https://doi.org/10.1016/j.jvs.2013.08.003>
- Mishra SC, Chhatbar KC, Kashikar A et al (2017) Diabetic foot. *BMJ* 359:j5064. <https://doi.org/10.1136/bmj.j5064>

- Mottolini N (2022) Diabetes and lower-limb complications a thematic review of clinical negligence claims. *NHS Resolution*. Available at: <https://tinyurl.com/yzfftm2k> (accessed 16.01.23)
- Moxey PW, Gogalniceanu P, Hinchliffe et al (2011) Lower extremity amputations — a review of global variability in incidence. *Diabet Med* 28: 1144–53. <https://doi.org/10.1111/j.1464-5491.2011.03279.x>
- National Audit Office (2012) The management of Adult Diabetes Services in the NHS. London: NAO. Available at: <https://www.nao.org.uk/wp-content/uploads/2012/05/121321.pdf> (accessed 15.01.2024)
- National Wound Care Strategy (2023) Foot Ulcer Recommendations August 2023. Available at: <https://www.nationalwoundcarestrategy.net/wp-content/uploads/2023/08/NWCSP-Foot-Ulcer-Recommendations-1.8.2023.pdf> (accessed 15.01.2024)
- NHS Digital (2018) *National Diabetes Inpatient Audit (NaDIA) — 2018*. Available at: <https://digital.nhs.uk/data-and-information/publications/statistical/national-diabetes-inpatient-audit/2018> (accessed 15.01.2024)
- NHS Digital (2019) National Diabetes Foot Care Audit Fourth Annual Report. Available at: <https://www.hqip.org.uk/wp-content/uploads/2019/05/National-Diabetes-Foot-Care-Audit-fourth-annual-report-FINAL.pdf> (accessed 15.01.2024)
- NHS Digital (2022) *NDA Interval Review: July 2014–March 2021*. Available at: <https://digital.nhs.uk/data-and-information/publications/statistical/national-diabetes-footcare-audit/2014-2021> (accessed 15.01.2024)
- NHS England (2016) New Framework to Improve Care for Patients with Diabetic Foot Disease Published. Available at: <https://www.england.nhs.uk/2016/05/diabetic-foot-disease/> (accessed 15.01.2024)
- NHS England (2019) NHS Long Term Plan. Available at: <https://www.longtermplan.nhs.uk/> (accessed 15.01.2024)
- NICE (2019) Guideline (NG19) Diabetic Foot Problems: Prevention and Management. London: NICE. Available at <https://www.nice.org.uk/guidance/ng19> (accessed 15.01.2024)
- Nickinson ATO, Bridgwood B, Houghton JSM et al (2020) A systematic review investigating the identification, causes, and outcomes of delays in the management of chronic limb-threatening ischemia and diabetic foot ulceration. *J Vasc Surg* 71(2):669–81.e2. <https://doi.org/10.1016/j.jvs.2019.08.229>
- Noronen K, Saarinen E, Albäck A, Venermo M (2017) Analysis of the elective treatment process for critical limb ischaemia with tissue loss: diabetic patients require rapid revascularisation. *Eur J Vasc Endovasc Surg* 53(2):206–13. <https://doi.org/10.1016/j.ejvs.2016.10.023>
- Ortegon MM, Redekop WK, Niessen LW (2004) Cost-effectiveness of prevention and treatment of the diabetic foot: a Markov analysis. *Diabetes Care* 27(4): 901–7. <https://doi.org/10.2337/diacare.27.4.901>
- Paisey RB, Abbott A, Levenson R et al (2018) Diabetes-related major lower limb amputation incidence is strongly related to diabetic foot service provision and improves with enhancement of services: peer review of the South-West of England. *Diabet Med* 35(1): 53–62. <https://doi.org/10.1111/dme.13512>
- Pankhurst C, Edmonds M (2018) Barriers to foot care in patients with diabetes as identified by healthcare professionals. *Diabet Med* 35(8): 1072–7. <https://doi.org/10.1111/dme.13653>
- Phillips A, Mehl A (2015) Diabetes mellitus and the increased risk of foot injuries. *J Wound Care* 24(5 Suppl 2): 4–7. <https://doi.org/10.12968/jowc.2015.24.sup5b.4>
- Rayman G, Kar P (2020) Diabetes GIRFT Programme National Specialty Report. Available at: <https://www.gettingitrightfirsttime.co.uk/wp-content/uploads/2020/11/GIRFT-diabetes-report.pdf> (accessed 15.01.2024)
- Robbie J, Bewsey C, Stang D et al (2023) Zero All Preventable (ZAP) amputations: FDUK position statement on “missingness” and reducing major amputations in the acute diabetic foot pathway. *The Diabetic Foot Journal* 26(1): 30–5. Available at: <https://tinyurl.com/3br2au5s> (accessed 16.01.2024)
- Sanders AP, Stoeldraaijers LG, Pero MW et al (2013) Patient and professional delay in the referral trajectory of patients with diabetic foot ulcers. *Diabetes Res Clin Prac* 102(2): 105–11. <https://doi.org/10.1016/j.diabres.2013.09.016>
- Smith-Ström H, Iversen MM, Iglund J, et al (2017) Severity and duration of diabetic foot ulcer (DFU) before seeking care as predictors of healing time: A retrospective cohort study. *PLoS ONE* 12(5):e0177176. <https://doi.org/10.1371/journal.pone.0177176>
- Vas P, Edmonds M, Kavarthapu V et al (2018) The diabetic foot attack: “Tis too late to retreat!” *Int J Low Extrem Wounds* 17(1): m7–13. <https://doi.org/10.1177/1534734618755582>
- Vascular Society of Great Britain and Ireland (2021) *Provision of Services for Patients with Vascular Disease 2021*. Available at: [https://www.vascularsociety.org.uk/\\_userfiles/pages/files/Resources/FINAL%20POVS.pdf](https://www.vascularsociety.org.uk/_userfiles/pages/files/Resources/FINAL%20POVS.pdf) (accessed 15.01.2024)
- Wukich D, Raspovic K, Suder N (2018) Patients with diabetic foot disease fear major lower-extremity amputation more than death. *Foot Ankle Spec* 11(1): 17–21. <https://doi.org/10.1177/1938640017694722>
- Yan J, Liu Y, Zhou B, Sun M (2014) Pre-hospital delay in patients with diabetic foot problems: influencing factors and subsequent quality of care. *Diabet Med* 31(5): 624–29. <https://doi.org/10.1111/dme.12388>